

Environmental Assessment of Aviation Gasoline Storage Tank Relocation At Davis-Monthan Air Force Base, Arizona

Davis-Monthan AFB

January 2005



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January 28, 2005

Ms. Judy Wadley
355 CONS/MSAC
3180 S. Craycroft Road
Davis-Monthan AFB, AZ 85707-3522

Reference: Contract No.: F44650-99-D0004/5C14, Control No.: ECAS 566
e²M Project No.: 5700-566

Subject: **Final Report Disk.** Environmental Assessment (EA) of Aviation Gasoline Storage Tank
Relocation at Davis-Monthan Air Force Base, Arizona (Task 3).

Dear Ms. Wadley:

Enclosed, please find one copy of the final report disk and one camera ready Final EA including all maps, figures, and Appendices for the Aviation Gasoline Storage Tank Relocation at Davis-Monthan Air Force Base (AFB), Arizona as required by the above-referenced Task Order's Scope of Work. In addition, one final report disk and three camera ready copies of the above documents were forwarded to Ms. Caren Bidegain (Department of Homeland Security [DHS]) and one final report disk and one camera ready copy of the above report was sent to Dr. Charles Miller (355 CES/CEV). Copies of the signed Finding of No Significant Impact (FONSI) are bound into each copy of the Final EA. In addition, a compact disc (CD) containing the Final EA and FONSI in Adobe Acrobat (.pdf) format were included with each transmittal package.

It was our pleasure working with you, DHS, and Davis-Monthan AFB throughout the development of the EA. We would like to take this opportunity to thank you and the rest of the DHS and Davis-Monthan AFB staff for all of the assistance provided throughout the project. We look forward to the opportunity to assist you further in the near future. Should you have any questions or need any further information, please contact me at (916) 361-6600 or Mr. Brian Hoppy at (610) 949-9699. Thank you.

Sincerely,
engineering-environmental Management, Inc.

Sean A. McCain

Sean A. McCain
Project Manager

Enclosures: Final Report Disk and Final EA and FONSI

cc: Dr. Charles Miller (355 CES/CEV)
Ms. Lauri Watson (e²M)
Mr. Brian Hoppy (e²M)
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Ms. Caren Bidegain (DHS)
Mr. Charlie Chambers (DHS)
Mr. Ron Lamb (e²M)
5700-566 Project File

FINDING OF NO SIGNIFICANT IMPACT (FONSI)

1.0 NAME OF THE PROPOSED ACTION

Aviation Gasoline (AVGAS) Storage Tank Relocation at Davis-Monthan Air Force Base (DMAFB), Arizona.

The purpose of the Proposed Action is to construct a secondary means of containment for the AVGAS storage tank, fuel trucks, and bowsters in the event that there is a fuel spill. The need for the Proposed Action is to fulfill the requirements of Air Force Instruction (AFI) 32-7042, *Solid Waste and Hazardous Waste Compliance*, Air Force Pamphlet 32-7043, *Hazardous Waste Management Guide*, and 40 CFR 112.7. Once the Proposed Action is implemented, any fuel spill event would be contained within the secondary catch basin, preventing potential petroleum products from reaching navigable waters and contaminating soil.

2.0 DESCRIPTION OF PROPOSED ACTION AND NO ACTION ALTERNATIVES

Proposed Action. The Department of Homeland Security (DHS), a tenant of the 335th Wing (355 AG), proposes to construct a concrete secondary containment pad, site-access roads, and associated utilities; install a fuel pump; and relocate a 6,000-gallon AVGAS storage tank, three fuel trucks, and two bowsters to this new containment area.

No Action Alternative. Under the No Action Alternative, the secondary containment area would not be constructed, the fuel trucks and bowsters would continue to be parked on available taxiway space, and the AVGAS storage tank would continue to be stored with no secondary containment. If the trucks, bowsters, or AVGAS storage tank were to rupture, or a spill occurred, contaminants could reach navigable water and the trucks, bowsters, and AVGAS storage tank would violate AFI 32-7042, Air Force Pamphlet 32-7043, and 40 CFR 112 standards.

3.0 SUMMARY OF ENVIRONMENTAL EFFECTS

Air Quality. The Proposed Action would be constructed in Fiscal Year 2005. Construction activities associated with the Proposed Action would be below *de minimis* levels and would not cause a violation of the national ambient air quality standards and a full Conformity Determination would not be required. Therefore, no significant direct or indirect effects on regional or local air quality would result from implementation of the Proposed Action.

Geological Resources. Under the Proposed Action, construction activities, such as grading, vegetation removal, excavation, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit environmental consequences resulting from construction activities. No significant impact on regional or local topography or physiographic features would result from implementation of the Proposed Action.

Water Resources. The Proposed Action would result in a small increase in the impervious surface area, which would tend to increase the amount of runoff. The Proposed Action could result in an increase in the velocity with which storm water drains from the project area. This could in turn increase erosion and sedimentation. However, this impact can be alleviated with proper engineering design.

Hazardous Materials and Wastes Management. There would be no significant impacts on hazardous materials and wastes management due to implementation of the Proposed Action. Minor hazardous

materials and wastes would be generated during project construction. In addition, the Proposed Action is within or in close proximity to Environmental Restoration Program (ERP) sites. Because of the potential threat of contamination from ERP sites during construction, it is recommended that a health and safety plan be prepared in accordance with Occupational Safety and Health Administration (OSHA) requirements prior to commencement of construction activities. In addition, should contamination be encountered, handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations, United States Air Force (USAF) Instructions, and DMAFB programs and procedures. While working in ERP sites, workers should either be 40-hour HAZWOPER trained, or should be overseen by a supervisor with OSHA Site Supervisor certification.

Infrastructure. The Proposed Action would tie into existing electrical lines near Pump House 202. A small amount of solid waste would be generated during and after construction of the Proposed Action. There would be no significant impacts on base infrastructure due to implementation of the Proposed Action.

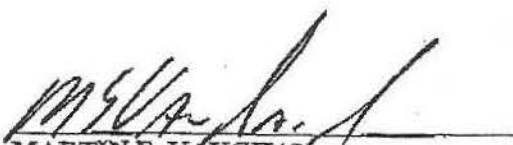
Safety. There would be no significant impacts on structure or personnel safety due to implementation of the Proposed Action. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at DMAFB during the normal workday because the level of such activity would increase. In addition, construction workers could be exposed to buried unexploded ordnance and hazardous wastes during project construction. Construction workers would have the project area surveyed and obtain a waiver from Headquarters, Air Combat Command prior to commencement of construction activities.

4.0 CONCLUSION

Based on the provisions set forth in the Proposed Action, all activities were found to comply with the criteria or standards of environmental quality and coordinated with the appropriate Federal, state, and local agencies. The attached Environmental Assessment (EA) and a draft of this Finding of No Significant Impact/Finding of No Practicable Alternative (FONSI/FONPA) were made available to the public on *November 19, 2004* for a 30-day review period. No public or agency comments were received during the review period.

FINDINGS

Finding of No Significant Impact. After review of the EA prepared in accordance with the requirements of the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations, and *Environmental Impact Analysis Process (EIAP)*, 32 CFR Part 989, as amended, I have determined that the Proposed Action would not have a significant impact on the quality of the human or natural environment. An Environmental Impact Statement will not be prepared. This decision has been made after taking into account all submitted information, and considering a full range of practical alternatives that would meet project requirements and are within the legal authority of the USAF.


MARTIN E. VAUGHAN
Field Director, Tucson Air Branch

1-25-05
Date

**ENVIRONMENTAL ASSESSMENT OF
AVIATION GASOLINE STORAGE TANK RELOCATION
AT DAVIS-MONTHAN AIR FORCE BASE, ARIZONA**

**Davis-Monthan Air Force Base
Environmental Quality Flight
5825 East Madera Street
Davis-Monthan Air Force Base, AZ 85707-4927**

JANUARY 2005

COVER SHEET

ENVIRONMENTAL ASSESSMENT OF AVIATION GASOLINE STORAGE TANK RELOCATION AT DAVIS-MONTHAN AIR FORCE BASE, ARIZONA

Responsible Agencies: U.S. Air Force (USAF), Air Combat Command (ACC), and 355th Wing (355 WG), Davis-Monthan Air Force Base, Arizona.

Affected Location: Davis-Monthan Air Force Base, Arizona

Report Designation: Environmental Assessment (EA)

Proposed Action: The Department of Homeland Security (DHS), a tenant of the 355 WG, proposes to construct a concrete secondary containment pad, site-access roads, and associated utilities; install a fuel pump; and relocate a 6,000-gallon aviation gasoline (AVGAS) storage tank, three fuel trucks, and two bowzers to a new containment area. Two alternatives will be evaluated as part of the EA: (1) the Proposed Action (relocating AVGAS and Jet A fuel tanks and constructing a concrete secondary containment pad) and (2) the No Action Alternative. Resources that are considered in the impact analysis are air quality, geological resources, water resources, hazardous materials and wastes management, infrastructure, and safety.

**ENVIRONMENTAL ASSESSMENT OF
AVIATION GASOLINE STORAGE TANK RELOCATION
AT DAVIS-MONTHAN AIR FORCE BASE, ARIZONA**

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1. Purpose of and Need for the Proposed Action

1.1 Background

Davis-Monthan Air Force Base (DMAFB) is a United States Air Force (USAF) base under the Air Combat Command (ACC). DMAFB is headquarters to the 355th Wing (355 WG). The 355 WG provides support for DMAFB, ranging from financial, personnel, housing, maintenance, legal, recreational, and medical needs to fire protection, chaplain services, and base security.

The Department of Homeland Security (DHS) is a tenant of the 355 WG at DMAFB. DHS located their 6,000-gallon Aviation Gasoline (AVGAS) storage tank near the Aero Club and parked their fuel trucks and bowzers within available parking locations along Taxiway C (West Ramp). An Environmental, Safety, and Occupational Health Compliance Assessment and Management Program (ESOH CAMP) inspection team identified that the fuel trucks and bowzers were being parked with inadequate containment. Multiple ESOHCAMP Corrective Action Plans have been submitted to the DHS and the base requiring the installation of secondary containment with sufficient capacity to hold the largest single compartment or container and an excess freeboard to contain precipitation. Title 40 Code of Federal Regulations (CFR) 112.7 requires that all mobile and portable oil storage tanks (onshore) be positioned to prevent spilled oil from reaching navigable waters.

In July 2003, the DHS took the AVGAS storage tank out of service, drained it of all fuel, and vented it of residual gas vapors. The AVGAS tank was stored adjacent to the Aero Club because of the lack of available space along the flightline. The AVGAS tank was relocated as needed when additional aircraft parking space was required and the AVGAS storage tank was cited by the ESOHCAMP team for improper storage, and potential safety risks in the event of an explosion. The AVGAS tank was then moved to a temporary storage location at the DMAFB used oil aggregation point which is within a controlled area. The AVGAS tank has double-walled containment with vapor recovery and leak detection devices. DHS fuel trucks and bowzers are parked on the sides of Taxiway C.

This Environmental Assessment (EA) analyzes DMAFB's Proposed Action and the No Action Alternative. If the analyses presented in the EA indicate that implementation of the Proposed Action would not result in significant environmental impacts, a Finding of No Significant Impact (FONSI) will be prepared. A FONSI briefly presents why a Proposed Action would not have a significant effect on the human environment and why an Environmental Impact Statement (EIS) is unnecessary. If significant environmental issues result that cannot be mitigated to insignificance, an EIS would be required, or the Proposed Action would be abandoned and no action would be taken.

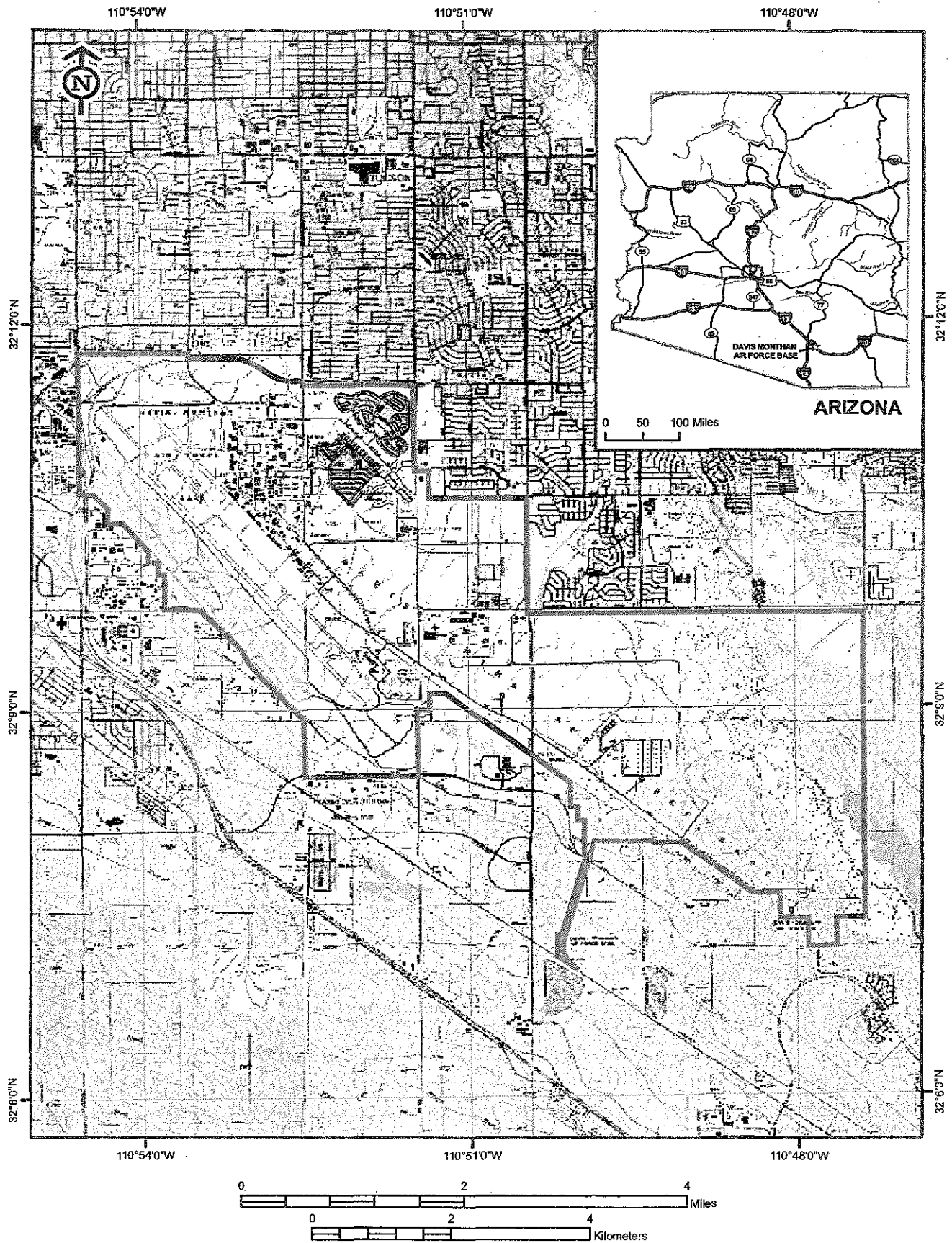


Figure 1-1. Davis-Monthan AFB and Surrounding Area

Air Quality

The Clean Air Act (CAA) establishes Federal policy to protect and enhance the quality of the nation's air resources to protect human health and the environment. The CAA requires that adequate steps be implemented to control the release of air pollutants and prevent significant deterioration in air quality. The 1990 amendments to the CAA require Federal agencies to determine the conformity of proposed actions with respect to State Implementation Plans (SIPs) for attainment of air quality goals.

Water Resources

The Clean Water Act (CWA) of 1977 (33 United States Code [U.S.C.] 1344) and the Water Quality Act of 1987 (33 U.S.C. 1251, et seq., as amended) establish Federal policy to restore and maintain the chemical, physical, and biological integrity of the nation's waters and, where attainable, to achieve a level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife; and recreation in and on the water.

Executive Order (EO) 11988, *Floodplain Management*, requires Federal agencies to take action to reduce the risk of flood damage; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains. Federal agencies are directed to consider the proximity of their actions to or within floodplains. Where information is unavailable, agencies are encouraged to delineate the extent of floodplains at their site.

Safety

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*, implements AFD 91-3, *Occupational Safety and Health*, by outlining the AFOSH Program. The purpose of the AFOSH Program is to minimize loss of USAF resources and to protect USAF personnel from occupational deaths, injuries, or illnesses by managing risks. In conjunction with the USAF Mishap Prevention Program (AFI 91-202), these standards ensure all USAF workplaces meet Federal safety and health requirements. This instruction applies to all USAF activities, including those of the ACC.

1.4.3 Interagency and Intergovernmental Coordination for Environmental Planning

NEPA requirements help ensure that environmental information is made available to the public during the decision making process and prior to actions being taken. The premise of NEPA is that the quality of Federal decisions will be enhanced if proponents provide information to the public and

2. Description of Proposed Action and Alternatives

2.1 Introduction

This section describes the Proposed Action, the No Action Alternative, alternatives considered but eliminated from further discussion, the decision to be made, and identification of the preferred alternative.

2.2 Current DMAFB Mission

DMAFB is the home of the 355 WG, an important element of the ACC. The operational mission of the 355 WG is to "Provide close air support, forward air liaison for Army forces, command and control, radar surveillance and control, and combat support forces to Unified Commander-in-Chiefs (CINC); conduct initial and re-qualification training for all A/AO-10 and EC-130 pilots and crews; and ensure Intermediate-Range Nuclear Forces (INF), Strategic Arms Reduction Treaty (START), Chemical Weapons Convention and Open Skies treaty compliance."

The primary mission of the 355 WG is to provide CINC's with worldwide, deployable, combat-ready A-10 close air support; OA-10 forward air controller support; command and control warfare capability; airborne battlefield air attack management; and early warning surveillance and radar control of combat aircraft near the forward battle area. DMAFB is also the home of Detachment 1, 120 Air National Guard (ANG) Fighter Intercept Group (FIG). The mission of this group is to scramble their F-16 aircraft in less than 5 minutes to identify, intercept, and, if necessary, destroy any airborne threat to U.S. security.

As the host unit at DMAFB, the 355 WG is also responsible for providing base operations, logistical and administrative support to all personnel and units on the base, and certain on-base services and facilities that are common to the 335 AW and tenant organizations. These include the fire department, fuel storage area, base operations, and service for transient aircraft.

On March 1, 2004, the DHS inherited the professional workforce, programs, and infrastructure of the U.S. Coast Guard, U.S. Customs Service, U.S. Immigration and Naturalization Service, and U.S. Transportation Security Administration. The DHS mission is to lead the unified national effort to secure America, prevent and deter terrorist attacks, protect against and respond to threats and hazards to the nation, ensure safe and secure borders, welcome lawful immigrants and visitors, and promote the free flow of commerce.

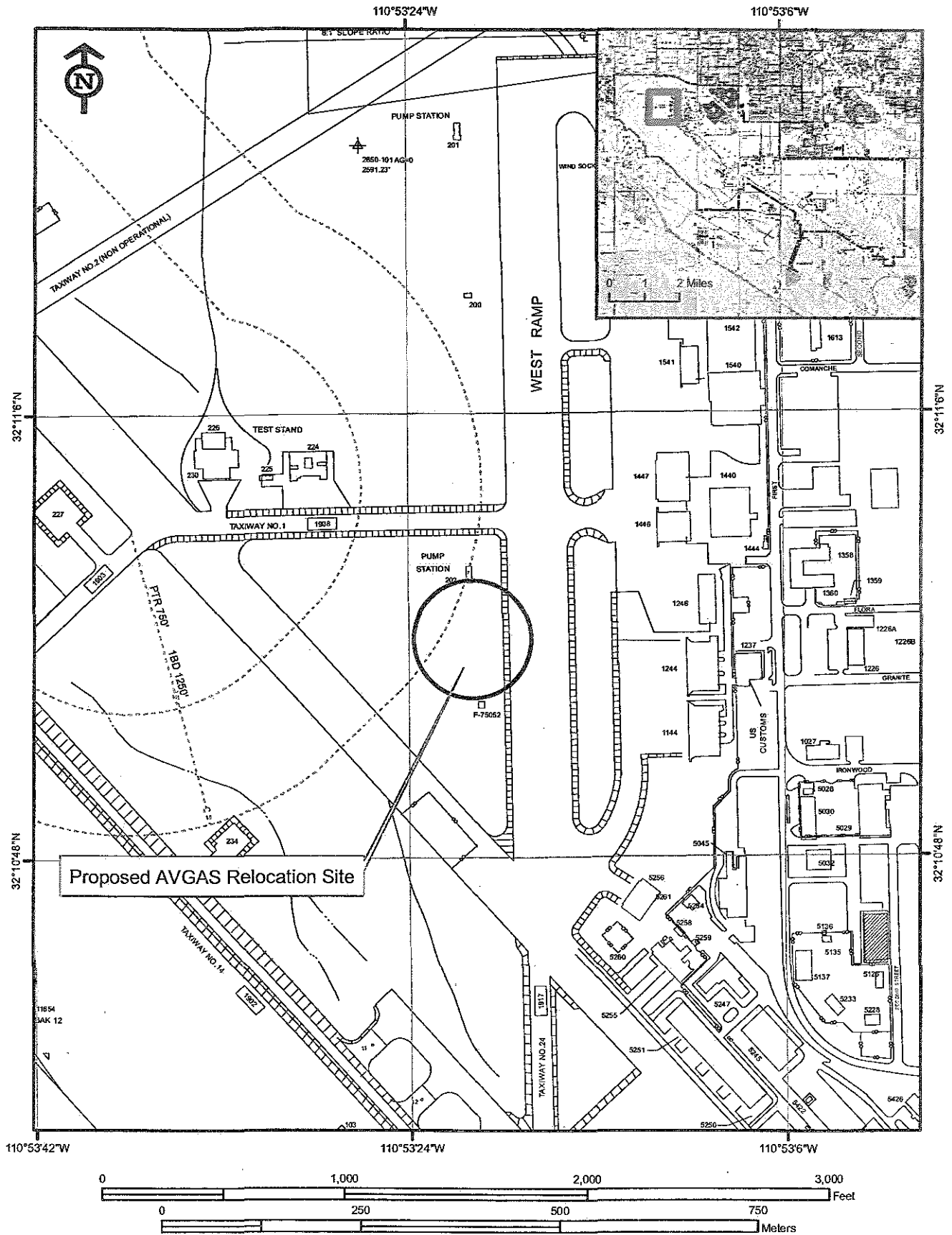


Figure 2-1. AVGAS Storage Tank Project Location

3. Affected Environment

Section 3 describes the environmental resources and conditions most likely to be affected by the Proposed Action and provides information to serve as a baseline from which to identify and evaluate environmental and socioeconomic changes likely to result from implementation of the Proposed Action. Baseline conditions represent current conditions. The potential environmental impacts of the Proposed Action and the No Action Alternative on the baseline conditions are described in Section 4.

In compliance with NEPA, CEQ guidelines, and 32 CFR, Part 989, as amended, the description of the affected environment focuses on those resources and conditions potentially subject to impacts. Some environmental resources and conditions that are often analyzed in an EA have been omitted from this analysis. The following details the basis for such exclusions:

Biological Resources. Implementation of the Proposed Action would occur in a previously disturbed area and would not impact any biological resources. The area where the Proposed Action would occur is not a suitable habitat for biological species. Threatened or endangered species or their habitat have not been observed in the location of the Proposed Action. Therefore, there would be no impact on biological resources at DMAFB. Accordingly, the USAF has omitted detailed examination of biological resources.

Cultural Resources. No known cultural or historic resources or artifacts have been identified in the area of the Proposed Action, and the Proposed Action would occur in a previously disturbed area. Therefore, there would be no impact on cultural resources at DMAFB. Accordingly, the USAF has omitted detailed examination of cultural resources. If an unexpected archaeological discovery occurs during construction, the unanticipated archaeological discoveries as defined in the DMAFB Integrated Cultural Resource Management Plan (ICRMP) would be followed (DMAFB 2003a). If archaeological properties are discovered, excavation and disturbance of the site would cease and the Cultural Resource Manager would be notified immediately. The Cultural Resource Manager would take actions to evaluate the discovery and provide guidance to the project engineer on any actions that should be taken to provide appropriate management treatment of the resource.

Land Use. All activities associated with the Proposed Action would be consistent with present and foreseeable land use patterns at DMAFB. Implementation of the Proposed Action would not significantly alter the existing land use at DMAFB. Accordingly, the USAF has omitted detailed examination of land use.

Table 3-1. National Ambient Air Quality Standards

Pollutant	Standard Value ^b		Standard Type
Carbon Monoxide (CO)			
8-hour Average	9 ppm	(10 mg/m ³)	Primary
1-hour Average	35 ppm	(40 mg/m ³)	Primary
Nitrogen Dioxide (NO ₂)			
Annual Arithmetic Mean	0.053 ppm	(100 µg/m ³)	Primary and Secondary
Ozone (O ₃)			
1-hour Average ^a	0.12 ppm	(235 µg/m ³)	Primary and Secondary
8-hour Average	0.08 ppm	(157 µg/m ³)	Primary and Secondary
Lead (Pb)			
Quarterly Average		1.5 µg/m ³	Primary and Secondary
Particulate ≤ 10 micrometers (PM ₁₀)			
Annual Arithmetic Mean		50 µg/m ³	Primary and Secondary
24-hour Average		150 µg/m ³	Primary and Secondary
Particulate ≤ 2.5 micrometers (PM _{2.5})			
Annual Arithmetic Mean		15 µg/m ³	Primary and Secondary
24-hour Average		65 µg/m ³	Primary and Secondary
Sulfur Dioxide (SO ₂)			
Annual Arithmetic Mean	0.03 ppm	(80 µg/m ³)	Primary
24-hour Average	0.14 ppm	(365 µg/m ³)	Primary
3-hour Average	0.50 ppm	(1300 µg/m ³)	Secondary

Notes:

^a The ozone 1-hour standard applies only to areas that were designated nonattainment when the ozone 8-hour standard was adopted in July 1997. The new 8-hour ozone standard is being contested in Federal court. No areas have been deemed nonattainment with the new 8-hour standard pending resolution of this case.

^b Parenthetical value is an approximately equivalent concentration.

ppm parts per million

mg/m³ milligrams per cubic meter

µg/m³ micrograms per cubic meter

The CAA places most of the responsibility to achieve compliance with the NAAQS on the individual states or local agencies that have been delegated CAA authority by USEPA. This is achieved through a SIP, which is required under the CAA. The SIP is a compilation of goals, strategies, schedules, permitting programs, and enforcement actions that lead the state into compliance with all NAAQS. Any changes to the compliance schedule or plan must be incorporated into the SIP and approved by USEPA. Areas not in compliance with a standard can be declared “nonattainment areas” by USEPA or the appropriate state or local agency. Based on the severity of an area’s nonattainment (i.e., number of times that ambient air quality exceeds the NAAQS), USEPA also categorizes nonattainment areas

The General Conformity Rule requires that any Federal action meet the requirements of a SIP or Federal Implementation Plan (FIP). More specifically, CAA Conformity is assured when a Federal action *does not*

- Cause a new violation of an NAAQS.
- Contribute to an increase in the frequency or severity of violations of NAAQS.
- Delay the timely attainment of any NAAQS, interim progress milestones, or other milestones toward achieving compliance with the NAAQS.

The conformity rule applies only to actions in nonattainment or maintenance areas and considers both direct and indirect emissions. The rule applies only to Federal actions that are considered “regionally significant” or where the total emissions from the action meet or exceed the *de minimis* thresholds. An action is regionally significant when the total nonattainment pollutant emissions exceed 10 percent of the AQCR’s total emissions inventory for that nonattainment pollutant. If a Federal action meets the *de minimis* threshold requirements and is not considered regionally significant, then a full Conformity Determination is not required.

DMAFB. Pima County Department of Environmental Quality (PDEQ) has primary jurisdiction over air quality in Pima County. The Proposed Action is in the Pima County Intrastate AQCR. The air quality in this region is designated as a maintenance area for CO and unclassifiable/attainment for all other criteria pollutants.

Pima County exceeded the Federal air pollution standards for PM₁₀ four times in 1999. PDEQ has been active in controlling fugitive dust emissions and enforcing control measures to prevent the county from becoming a nonattainment area for PM₁₀. Facilities, companies, and individuals are required to obtain an Air Quality Activity Permit from PDEQ for landscaping, earthmoving, trenching, and road construction within Pima County. Adequate control measures (Reasonably Available Control Measures for Dust Control) are mandated by PDEQ to limit excessive fugitive dust from these types of activities.

As a regulated facility, the base is required to submit actual annual emissions inventory information and compliance certificates. DMAFB is considered a major source according to the CAA Amendment Title V requirements (DMAFB 2003b).

DMAFB is in Seismic Zone II, which is characterized by moderate intensity earthquakes of intermediate frequency. There has been no significant earthquake activity in the area during the past century.

Soils. Most of the developed portion of DMAFB is on Mohave soils and urban land with 1 to 8 percent slopes. Mohave soils are loamy down to 60 inches or more. Permeability of Mohave soils is moderately slow and runoff is slow. Susceptibility to water and wind erosion is moderate.

The majority of the undeveloped portion of DMAFB is on Tubac gravelly loam with 1 to 8 percent slopes. Tubac soils have a surface covered with 25 percent gravel and 5 percent cobbles. The surface layer is gravelly loam or coarse sandy loam. The subsoil is gravelly sandy clay loam to a depth of 66 inches or more. Permeability is slow and runoff is moderate. Susceptibility to water and wind erosion is slight.

3.3 Water Resources

3.3.1 Definition of Resource

Water resources include surface water, groundwater, and floodplains. Evaluation identifies the quantity and quality of the resource and its demand for potable, irrigation, and industrial purposes.

For the purposes of this EA, floodplains are low-elevation areas that are subject to flooding from heavy rain. The risk of flooding typically hinges on local topography, frequency of precipitation events, precipitation intensity, and size of the watershed above the floodplain. Flood potential is evaluated by the Federal Emergency Management Agency (FEMA). Flood Insurance Rate Maps (FIRMs) identify the 100-year and 500-year floodplains. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year. Certain facilities, such as hospitals, schools, or storage buildings for irreplaceable records, inherently pose too great a risk to be located in either the 100- or 500-year floodplain. Federal, state, and local regulations often limit floodplain development to passive uses such as recreational and preservation activities to reduce the risks to human health and safety.

EO 11988, *Floodplain Management*, requires Federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of the appropriate Flood Insurance Rate Map, which contains enough general information to determine the relationship of the project area to nearby floodplains. EO 11988 directs Federal agencies to avoid floodplains unless the agency determines that there is no practicable alternative.

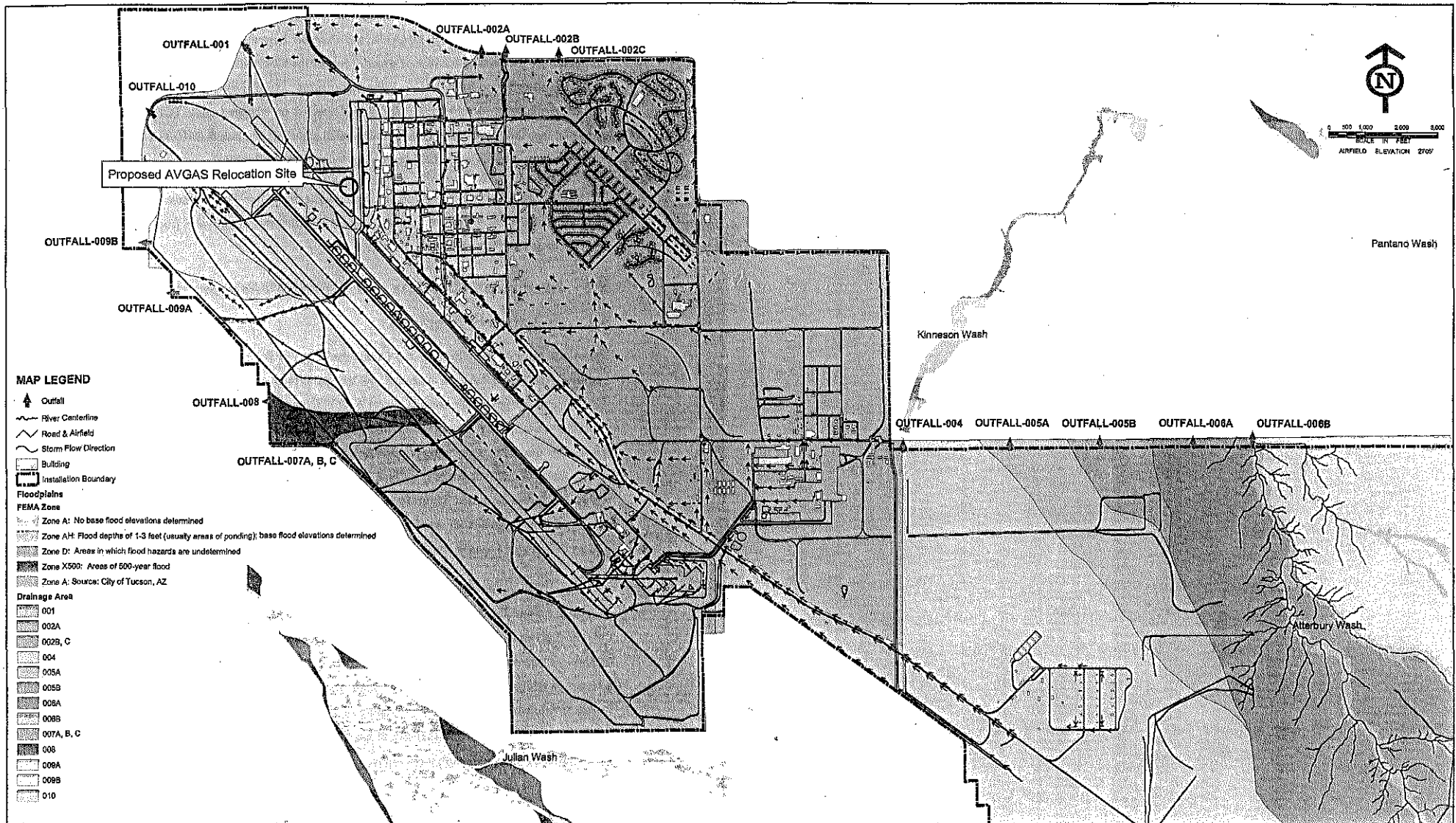


Figure 3-1. Storm Water Outfalls on Davis-Monthan AFB

(less than 200 feet) toward the mountains and thicker (greater than 5,000 feet) toward the center of the basin. In the vicinity of DMAFB, the Pantano Formation, Tinaja Beds, and Fort Lowell Formation are the primary sources of water. Most of the base wells draw water from the Tinaja Beds, with some contribution from the Fort Lowell Formation. Groundwater is the primary source of water in the Tucson area. Recharge is very slow. Studies on irrigated lands in central Arizona have estimated that downward flow rates in unsaturated materials are less than 10 feet per year. Vertical migration in unirrigated areas would take even longer (DMAFB 1998a).

DMAFB operates 11 wells that pump groundwater from the Tinaja Beds and the Fort Lowell Formation of the Tucson Basin aquifer. The base withdraws more water from the aquifer than is replaced each year through natural recharge.

3.4 Hazardous Materials and Wastes Management

3.4.1 Definition of Resource

Hazardous material is defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA), and the Toxic Substances Control Act (TSCA), as any substance with physical properties of ignitability, corrosivity, reactivity, or toxicity that might cause an increase in mortality, a serious irreversible illness, incapacitating reversible illness, or pose a substantial threat to human health or the environment. Hazardous waste is defined by the Resource Conservation and Recovery Act (RCRA), which was further amended by the Hazardous and Solid Waste Amendments (HSWA), as any solid, liquid, contained gaseous, or semisolid waste; or any combination of wastes that poses a substantial present or potential hazard to human health or the environment.

Evaluation of hazardous materials and wastes focuses on underground storage tanks and aboveground storage tanks and the storage, transport, and use of pesticides and herbicides, fuels, and Petroleum, Oil, and Lubricants (POLs). Evaluation can also extend to generation, storage, transportation, and disposal of hazardous wastes when such activity occurs at or near the project site of a proposed action. In addition to being a threat to humans, the improper release of hazardous materials and wastes can threaten the health and well-being of wildlife species, botanical habitats, soil systems, and water resources. In the event of release of hazardous materials or wastes, the extent of contamination varies based on the type of soil, topography, and water resources.

Special hazards are those substances that might pose a risk to human health but are not regulated as contaminants under the hazardous waste statutes. Hazards of significance associated with the Proposed Action are asbestos and lead-based paint. The presence of special hazards or controls over them might affect, or be affected by, a proposed action. Information on special hazards describing their locations, quantities, and condition assists in determining the significance of a proposed action.

To protect habitats and people from inadvertent and potentially harmful releases of hazardous substances, the U.S Department of Defense (DOD) dictated that all facilities develop and implement Hazardous Material Emergency Planning and Response Plans or Spill Prevention, Control, and Countermeasure Plans. Also, DOD has developed the Environmental Restoration Program (ERP), intended to facilitate thorough investigation and cleanup of contaminated sites on military installations. These plans and programs, in addition to established legislation (i.e., CERCLA and RCRA), effectively form the “safety net” intended to protect the ecosystems on which most living organisms depend.

AFPD 32-70, *Environmental Quality*, establishes the policy that the USAF is committed to the following environmentally sound practices:

- Cleaning up environmental damage resulting from its past activities
- Meeting all environmental standards applicable to its present operations
- Planning its future activities to minimize environmental impacts
- Managing responsibly the irreplaceable natural and cultural resources it holds in public trust
- Eliminating pollution from its activities wherever possible

The AFPD 32-70 and the AFI 32-7000 series incorporate the requirements of all Federal regulations, other AFIs, and DOD Directives for the management of hazardous materials, hazardous wastes, and special hazards.

3.4.2 Existing Conditions

The 355th Environmental Quality Flight (355 CES/CEV) is responsible for the hazardous material and waste plans for the installation. In conformance with the policies established by AFPD 32-70, 355 CES/CEV has developed plans to manage hazardous materials, hazardous wastes, and special hazards on the base.

Environmental Restoration Program. The ERP at DMAFB began in January 1982 with a basewide records search that identified 34 ERP sites for further investigation. Supplemental site assessments and investigations in the later 1980s and early 1990s have brought the total number of sites to 49. Forty-six sites are currently closed under No Further Action, one is under investigation, and eight are under remediation (DMAFB 2003c). These ERP sites include landfills, flush farm, fire training area, fuel pumphouse, and a dross pile. The primary contaminants in soil and water include fuels, waste oil, waste solvents, paints, garbage, and dross. Currently, DMAFB is not on the National Priorities List. There is one ERP site in the vicinity of the project area. This site is titled SS-48, AVGAS Pipeline. ERP Site SS-48 is closed and has been designated as No Further Action.

3.5 Infrastructure

3.5.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as urban, or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure information provided was obtained from *The General Plan Davis-Monthan Air Force Base Tucson, Arizona* (DMAFB 2000) and provides a brief overview of each infrastructure component and comments on its existing general condition. The infrastructure components to be discussed in this section are transportation, electrical utilities, storm water, liquid fuel, and solid waste systems.

Solid waste management primarily involves the availability of landfills to support a population's residential, commercial, and industrial needs. Alternative means of waste disposal might involve waste-to-energy programs or incineration. In some localities, landfills are designed specifically for, and limited to, disposal of construction and demolition debris. Recycling programs for various waste categories (e.g., glass, metals, and papers) reduce reliance on landfills for disposal.

3.5.2 Existing Conditions

Transportation. Interstate 10, just west of DMAFB, is the major highway serving Tucson. Interstate 19 is the major highway between Tucson and the Mexican border. Golf Links Road is the primary street, which runs east-west along the northern base boundary. It crosses Craycroft Road that serves as the Main Gate entry street to the base, and Sunglow Road which serves the Swan Gate access. Wilmot Road runs north-south and serves the Wilmot Gate and off-base access to the Aerospace

just due south of the golf course and the other at the northern end of the airfield runway. Ultimately storm water from DMAFB discharges directly or indirectly to the Santa Cruz River.

The storm drainage system is generally adequate for the arid climate. However, the rainy season has particularly heavy thunderstorms from July through September, which cause occasional inundation for some areas of the base. Excessive flows of storm water runoff have degraded some of the security grates at the outfall locations where the flows exit the base. During heavy storms, the bars of these grates are bent by the force of the water exiting the base.

The proposed project area is drained by storm water Outfall 001 (refer to Figure 3-1). Storm water from Outfall 1 is part of a ditch system in the northwest corner of the base. Because Outfall 001 drains the flightline area, storm water from these areas has the potential to contain industrial pollutants, such as fuels, oils and lubricants, detergents, waste oils, and hazardous chemicals. A remedial investigation was performed at Outfall 1 to determine what contamination, if any, is present. Based on borings and surfaces water samples, no further study is planned, and no further action will be taken (DMAFB 2003c).

Liquid Fuel System. The base receives, stores, and distributes a variety of fuels including JP-8 AVGAS, DL-2 diesel fuel, Mogas unleaded regular fuel, and two kinds of cryogenics fuel (liquid oxygen and liquid nitrogen). The flightline uses four locations as hot refueling pits; two of these are serviced by Pump House 207 (J-4), and two are serviced by Pump House 206 (J-3). Pump houses 204 (J-1) and 205 (J-2) are not currently active. These four pump houses are connected by an underground pipeline. The West Ramp has two pump houses: Pump House 202 (A-2), which can dispense fuel but is resupplied by tanker truck, and Pump House 201 (A-1), which is inactive.

Solid Waste. Wastes disposed of in the solid waste stream at DMAFB are expected to consist only of those materials that cannot be effectively recycled. This commonly includes paper towels and other sanitary wastes; food-soiled wrappings and packagings; most food wastes; plastic bags and wrappings; nonrecyclable construction and demolition (C&D) wastes; and other miscellaneous nonrecyclable materials from administrative, industrial, food-service, and retail operations.

C&D waste and nonrecurring municipal solid waste (MSW) generated under contract are the responsibility of the contractor. C&D waste and nonrecurring MSW generated under contract or by base personnel are recycled to the greatest extent possible. Contractors are required to report the quantities of recycled C&D waste. Specifications in these contracts require contractors to provide information regarding the disposition of the waste they generate.

ventilation, respirators) to ensure personnel are properly protected or unexposed; and to ensure a medical surveillance program is in place to perform occupational health physicals for those workers subject to any accidental chemical exposures.

DMAFB has several activities which require extensive QD safety zones. These zones are established to minimize risk and exposure to individuals from explosives and explosive storage facilities. No inhabited facilities are allowed within QDs. QDs at DMAFB include the munitions storage area, explosive ordnance disposal (EOD) area, arm and disarm aprons on the airfield, small arm training ranges, AMARC EOD area, AMARC missile dismantling pad, and AMARC ammunition shipping/inspection/storage facilities (DMAFB 2000).

4. Environmental Consequences

This section of the EA assesses potential environmental consequences associated with the Proposed Action. The EA analysis includes direct, indirect, and cumulative impacts. Direct impacts are caused by the action and occur at the same time and place. Indirect impacts are caused by the action and occur later in time or are farther removed in distance, but are still reasonably foreseeable. Cumulative impacts are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (40 CFR 1508.7). The cumulative impact analysis is provided in Section 5 of this EA. Environmental consequences are addressed in the context of the scope of the Proposed Action and No Action Alternative as described in Section 2 and in consideration of the potentially affected environment as characterized in Section 3.

4.1 Air Quality

4.1.1 Evaluation Criteria

The environmental consequences to local and regional air quality conditions near a proposed Federal action are determined based upon the increases in regulated pollutant emissions relative to existing conditions and ambient air quality. Specifically, the impact in NAAQS “attainment” areas would be considered significant if the net increases in pollutant emissions from the Federal action would result in any one of the following scenarios:

- Cause or contribute to a violation of any national or state ambient air quality standard
- Expose sensitive receptors to substantially increased pollutant concentrations
- Represent an increase of 10 percent or more in an affected AQCR emissions inventory
- Exceed any evaluation criteria established by a SIP

The area including DMBFB is a maintenance area for CO and is in attainment for all other criteria pollutants. However, Pima County is an area of concern for PM₁₀ emissions. Impacts on air quality in NAAQS “nonattainment” areas are considered significant if the net changes in project-related pollutant emissions result in any of the following scenarios:

Table 4-1. Conformity *de minimis* Emission Thresholds

Pollutant	Status	Classification	<i>de minimis</i> Limit (tpy)
Ozone (measured as Nitrogen Oxides (NO _x) or Volatile Organic Compounds (VOCs))	Nonattainment	Extreme	10
		Severe	25
		Serious	50
		Moderate/marginal (inside ozone transport region)	50 (VOCs)/100 (NO _x)
	Maintenance	All others	100
		Inside ozone transport region	50 (VOCs)/100 (NO _x)
		Outside ozone transport region	100
Carbon Monoxide (CO)	Nonattainment/maintenance	All	100
Particulate Matter (PM ₁₀)	Nonattainment/maintenance	Serious	70
		Moderate	100
		Not Applicable	100
Sulfur Dioxide (SO ₂)	Nonattainment/maintenance	Not Applicable	100
Nitrogen Oxides (NO _x)	Nonattainment/maintenance	Not Applicable	100

Source: 40 CFR 93.153

emissions from a construction site is proportional to the area of land being worked and the level of construction activity.

During construction, emissions from the Proposed Action would produce slightly elevated short-term PM₁₀ ambient air concentrations. However, the effects would be temporary and would fall off rapidly with distance from the proposed construction site.

Conformity. Since the Proposed Action is in a maintenance area for CO, General Conformity Rule requirements are applicable. As shown in Table 4-2, the Proposed Action would generate CO emissions well below conformity *de minimis* limits as specified in 40 CFR 93.153. Because the emissions generated would be below *de minimis* levels, it is reasonable to assume that the Proposed Action would not cause a violation of the NAAQS and a full Conformity Determination would not be required.

- Establish vegetation as quickly as possible when active operations have ceased.
- Eliminate unnecessary travel by restricting access or redirecting traffic to reduce traffic trips.

4.1.3 No Action Alternative

Under the No Action Alternative, there would be no change in or effects on air quality within Pima County.

4.2 Geological Resources

4.2.1 Evaluation Criteria

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating environmental consequences of a proposed action on geological resources. Generally, impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering design are incorporated into project development.

Analysis of environmental consequences on geological resources typically includes the following evaluation tools:

- Identification and description of resources that could potentially be affected.
- Examination of a proposed action and the potential effects this action might have on the resource.
- Assessment of the significance of environmental consequences.
- Provision of mitigation measures in the event that potentially significant impacts are identified.

Effects on geology and soils would be adverse if they would alter the lithology, stratigraphy, and geological structure that control groundwater quality, distribution of aquifers and confining beds, and groundwater availability; or change the soil composition, structure, or function within the environment.

4.2.2 Proposed Action

Short-term adverse effects on geology would be expected as a result of the Proposed Action, and would arise from construction activities. Construction activities, such as grading, excavation, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices (e.g., silt fencing, sediment traps, and application of water sprays in disturbed areas) during

management practices would be used to minimize erosion and sedimentation during project construction.

In the event of a spill, long-term, beneficial effects on water quality are possible. Due to the containment design of the Storage Tank there would be a decreased chance of surface water and groundwater contamination.

The 120-acre Ajo Way Detention Basin, downstream of DMAFB's runway outfalls, is used for flood control. The Ajo Detention Basin Environmental Restoration Project currently under way would eventually restore 27 acres of wetlands and riparian habitat to this basin (Pima County 2004). An increased sediment load in storm water draining into the basin would decrease the flood storage capacity of the basin over time. It could also negatively impact the establishment and maintenance of wetlands and riparian habitat.

Groundwater. The Proposed Action would potentially have long-term, beneficial effects on groundwater quality because it is less likely that there would be contamination from a spill.

Environmental Protection Measures

Adherence to best management practices and applicable codes and ordinances would reduce storm water runoff-related impacts to a level of insignificance. Erosion and sediment controls would be in place during construction to reduce and control siltation or erosion impacts on areas outside of the proposed construction sites.

4.3.3 No Action Alternative

Under the No Action Alternative, there would be no change in or effects on water resources at DMAFB.

4.4 Hazardous Materials and Wastes Management

4.4.1 Evaluation Criteria

Numerous local, state, and Federal laws regulate the storage, handling, disposal, and transportation of hazardous material and waste. The primary purpose of these laws is to protect public health and the environment. Environmental consequences associated with hazardous material and waste would be significant if the storage, use, transportation, or disposal of these substances were to substantially increase the risk to human health or exposure to the environment.

Environmental Protection Measures

It is recommended that a health and safety plan be prepared in accordance with OSHA requirements prior to commencement of construction activities. Should contamination be encountered, handling, storage, transportation, and disposal activities would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and DMAFB programs and procedures.

4.4.3 No Action Alternative

Under the No Action Alternative, there would be no change in or effects on hazardous materials and wastes management at DMAFB.

4.5 Infrastructure

4.5.1 Evaluation Criteria

Impacts on infrastructure are evaluated on their potential for disruption or improvement of existing levels of service and additional needs for energy and water consumption, wastewater systems, and transportation patterns and circulation. Impacts might arise from physical changes to circulation, construction activities, introduction of construction-related traffic on local roads, changes in daily or peak-hour traffic volumes, and energy needs created by either direct or indirect workforce and population changes related to base activities.

4.5.2 Proposed Action

Transportation Systems. Short-term minor adverse effects on transportation systems would occur under the Proposed Action. The construction phase of the Proposed Action would require delivery of materials to and removal of debris from construction sites. Construction traffic would comprise a small percentage of the total existing traffic and many of the vehicles would be driven to and kept on-site for the duration of construction, resulting in relatively few additional trips. Furthermore, potential increases in traffic volume associated with proposed construction activity would be temporary. Heavy vehicles are frequently on base roads. Therefore, the vehicles necessary for construction would be expected to create negligible to minor adverse effects on base roads. All road and lane closures would be coordinated with 355th Transportation Squadron and 355th Airfield Management and would be temporary in nature.

Electrical Utilities. Negligible adverse effects on electric utilities would occur as a result of the Proposed Action. Electric utilities would be installed to supply power to the fuel pump and for

4.6 Safety

4.6.1 Evaluation Criteria

If implementation of the Proposed Action were to substantially increase risks associated with the safety of DMAFB personnel, contractors, or the local community, or substantially hinder the ability to respond to an emergency, it would represent a significant impact. Furthermore, if implementation of the Proposed Action would result in incompatible land use with respect to safety criteria (e.g., height restrictions), impacts on safety would be significant. Impacts were assessed based on the potential effects of C&D activities.

4.6.2 Proposed Action

Short-term, minor adverse effects would be expected. Implementation of the Proposed Action would slightly increase the short-term risk associated with construction contractors performing work at DMAFB during the normal workday because the level of such activity would increase. Contractors would be required to establish and maintain safety programs. Projects associated with the Proposed Action would not pose a safety risk to base personnel or activities at the base. The proposed construction projects would enable the DHS to meet future mission objectives at the base and conduct or meet mission requirements in a safe operating environment.

Environmental Protection Measures

No environmental protection measures are required.

4.6.3 No Action Alternative

Under the No Action Alternative, there would be no change in or effects on construction worker or property safety at DMAFB.

5. Cumulative and Adverse Impacts

Cumulative impacts on environmental resources result from incremental effects of proposed actions, when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (Federal, state, and local) or individuals. Informed decisionmaking is served by consideration of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or anticipated to be implemented in the reasonably foreseeable future.

Other projects to evaluate in the cumulative impact analysis were identified through a review of public documents, information gained from the IICEP, and coordination with multiple agencies. During the timeframe of the Proposed Action, 355 WG would be constructing a Hazardous Cargo Pad southwest of Runway 30, a new Live Load Area northwest of Runway 12, demolishing all facilities that violate Unified Facilities Criteria and Federal Aviation Administration requirements, remove all vegetation in CZs within 1,000 ft of runway centerline, and constructing a fuel truck loading area south of Pump House 202. These small projects do not have the potential to combine with the Proposed Action or to form a significant impact.

5.1 Unavoidable Adverse Impacts

Unavoidable adverse impacts would result from implementation of the Proposed Action. None of these impacts would be significant.

Geological Resources. Under the Proposed Action, construction activities, such as grading, excavating, and recontouring of the soil, would result in soil disturbance. Implementation of best management practices during construction would limit environmental consequences resulting from construction activities. Standard erosion control means would also reduce environmental consequences related to these characteristics. Although unavoidable, impacts on soils at the base are not considered significant.

Water Resources. The Proposed Action would result in a minor increased rate of flow of storm water. However, with development and subsequent implementation of engineering practices to slow down the flow of water to outfall 001, the impact is not considered significant.

Hazardous Materials and Wastes. The generation of hazardous materials and wastes are unavoidable conditions associated with the Proposed Action. However, the potential for these

5.4 Irreversible and Irretrievable Commitments of Resources

The irreversible environmental changes that would result from implementation of the Proposed Action involve the consumption of material resources, energy resources, land, biological habitat, and human resources. The use of these resources is considered to be permanent.

Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that use of these resources will have on future generations. Irreversible effects primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable time frame (e.g., energy and minerals).

Material Resources. Material resources utilized for the Proposed Action include building materials (for construction of facilities), concrete and asphalt (for roads), and various material supplies (for infrastructure). None of the materials that would be consumed are not in short supply, would not limit other unrelated construction activities, and would not be considered significant.

Energy Resources. Energy resources utilized for the Proposed Action would be irretrievably lost. These include petroleum-based products (such as gasoline and diesel), and electricity. During construction, gasoline and diesel would be used for the operation of construction vehicles. During operation, gasoline would be used for the operation of private and government-owned vehicles. Electricity would be used by operational activities. Consumption of these energy resources would not place a significant demand on their availability in the region. Therefore, no significant impacts would be expected.

Human Resources. The use of human resources for construction and operation is considered an irretrievable loss, only in that it would preclude such personnel from engaging in other work activities. However, the use of human resources for the Proposed Action represents employment opportunities, and is considered beneficial.

6. Preparers

This EA has been prepared under the direction of DMAFB. The individuals who contributed to the preparation of this document are listed below.

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7. References

- DMAFB 1998a Davis-Monthan Air Force Base (DMAFB). 1998. *Storm Water Pollution Prevention Plan for Davis-Monthan Air Force Base, Arizona*. June 1998.
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- DMAFB 2003c DMAFB. 2003. *Management Action Plan*. December 2003.
- DMAFB 2004 DMAFB. 2004. Letter from DMAFB to Pima County Department of Environmental Quality (PDEQ) regarding Notification of Facility Changes - PDEQ Permit #1701 - Soil Vapor Extraction System at J-3 Pump House, Source 0206-06 - Aboveground Aviation Gasoline Storage Tank at U.S. Customs, Source 1749-02. June 2004.
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APPENDIX A

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING AND NOTICE OF AVAILABILITY

APPENDIX A

INTERAGENCY AND INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING CORRESPONDENCE LIST

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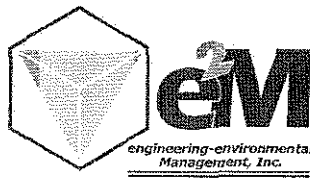
Arizona Game and Fish Department, Tucson
555 N. Greasewood Road
Tucson, AZ 85745

County Level

Pima County Department of Environmental
Quality
130 West Congress Street
Tucson, AZ 85701

City Level

City of Tucson, Main Library
101 N. Stone Ave
Tucson, AZ 85701



«Date»

«Name»

«Title»

«Company»

«Address1»

«Address2»

«CityStateZip»

Dear «Name»

The 355th Airlift Wing (355 WG) is preparing an Environmental Assessment (EA) of Aviation Gasoline Storage Tank Relocation at Davis-Monthan Air Force Base, Arizona. The Final EA and Draft Finding of No Significant Impact (FONSI) are included with this correspondence as Attachment 1.

The environmental impact analysis process for this proposal is being conducted by the Air Combat Command in accordance with the Council on Environmental Quality guidelines pursuant to the requirements of the National Environmental Policy Act of 1969. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, we request your participation by reviewing the attached EA and Draft FONSI and solicit your comments concerning the proposal and any potential environmental consequences. Please provide written comments or information regarding the action at your earliest convenience but no later than 30 days from the date of this letter. Also enclosed is a listing of those Federal, state, and local agencies that have been contacted (see Attachment 2). If there are any additional agencies that you feel should review and comment on the proposal, please include them in your distribution of this letter and the attached materials.

Please address questions concerning or comments on the proposal to engineering-environmental Management, Inc. (e²M). The point-of-contact at e²M is Mr. Sean McCain. He can be reached at (916) 361-6600. Please forward your written comments to Mr. McCain, in care of e²M, Inc., 3358 Mather Field Road, Rancho Cordova, CA 95670. Thank you for your assistance.

Sincerely

Sean A. McCain
Project Manager

Attachments:

- EA of Aviation Gasoline Storage Tank Relocation at Davis-Monthan Air Force Base, Arizona and Draft FONSI
- IICEP Distribution List

3358 Mather Field Road, Rancho Cordova, California 95670 • (916) 961-6600 • Fax (916) 361-6606

DENVER • JACKSONVILLE • PHILADELPHIA • SACRAMENTO • SAN ANTONIO • SAN DIEGO • TULSA • WASHINGTON, DC

The Draft Finding of No Significant Impact (FONSI) and Environmental Assessment (EA) were made available for public review from November 19 through December 18, 2004. The below Notice of Availability was published in the *Desert Airman* on November 19, 2004.

PUBLIC NOTICE

FONSI draft available for EA of Aviation Gasoline Storage Tank Relocation at D-M

engineering-environmental Management Inc. has prepared an environmental assessment of aviation gasoline storage tank relocation at Davis-Monthan Air Force Base, Ariz.

The 355th Wing is proposing to issue a finding of no significant impact based on this EA.

The analysis considered potential effects of the proposed action and the no action alternative on the following six resource areas:

- air quality
- geological resources
- water resources
- hazardous materials and wastes management
- infrastructure
- safety

The results, as found in the EA, show the Proposed Action would not have an adverse impact on the environment – indicating that a FONSI would be appropriate. An Environmental Impact Statement should not be necessary to implement the proposed action.

Copies of the Draft FONSI and EA showing the analysis are available at 355th Civil Engineer Squadron Environmental Flight for review.

Public comments on the Draft FONSI and EA will be accepted through Dec. 18.

In addition, the following Privacy Advisory was published as part of the Cover Sheet to the Draft EA:

Privacy Advisory

Your comments on this EA are requested. Letters or other written comments provided may be published in the EA. Comments will normally be addressed in the EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the EA.

APPENDIX B

AIR QUALITY EMISSION CALCULATIONS

Appendix B - Clean Air Act - General Conformity Analysis

Emissions Estimates for EA of Aviation Gasoline Storage Tank Relocation at Davis-Monthan AFB, AZ - Construction

This workbook contains

- | | |
|-------------------|--|
| Summary | (this worksheet) Summarizes total emissions by calendar year. |
| Combustion | (one sheet for each calendar year) Estimates emissions from non-road equipment exhaust |
| Grading | (one sheet for each calendar year) Estimates the number of days of site preparation, to be used for estimating heavy equipment exhaust and earthmoving dust emissions) |
| Fugitive | (one sheet for each calendar year) Estimates fine particulate emissions from earthmoving, vehicle traffic, and windblown dust. |

Proposed Construction and Demolition Projects for EA of AVGAS Storage Tank Relocation at Davis-Monthan AFB, AZ

Includes:

1 Construct 100% of Secondary Containment Pad	5,297 ft ²
2 Construct 100% of Access Roads	14,100 ft ²
3 Construct 100% of Fuel Pump and Pad	35 ft ²

Construction Site Air Emissions

Combustion Emissions of ROG, NO_x, SO₂, CO and PM₁₀ Due to Construction

User Inputs:

Total Building Area:	0 ft ²	(none)
Total Paved Area:	19,432 ft ²	(1-3)
Total Disturbed Area:	0.45 acres	(1-3)
Construction Duration:	1.0 years	(assumed)
Annual Construction Activity:	230 days/yr	(assumed)

Results:[Average per Year Over the Construction Period]

	ROG	NO _x	SO ₂	CO	PM ₁₀
Emissions, lbs/day	0.23	0.71	0.05	0.15	0.12
Emissions, tons/yr	0.03	0.08	0.01	0.02	0.01

AVGAS Storage Tank Relocation at Davis-Monthan AFB, AZ**Construction Fugitive Dust Emissions**

Calculation of PM10 Emissions Due to Site Preparation (Uncontrolled).

User Input Parameters / Assumptions

Acres graded per year:	0.45 acres/yr	(From "Combustion" worksheet)
Grading days/yr:	0 days/yr	(From "Grading" worksheet)
Exposed days/yr:	90 assumed days/yr	graded area is exposed
Grading Hours/day:	8 hr/day	
Soil piles area fraction:	0.10	(assumed fraction of site area covered by soil piles)
Soil percent silt, s:	8.5 %	(mean silt content; expected range: 0.5 to 23, AP-42 Table 13.2.2-1)
Soil percent moisture, M:	7 %	(http://www.cpc.noaa.gov/products/soilmst/drought_composite.html#CSMRP)
Annual rainfall days, p:	60 days/yr	rainfall exceeds 0.01 inch/day (AP-42 Fig 13.2.2-1)
Wind speed > 12 mph %, I:	7 %	Ave. of wind speed at Tucson, AZ
Fraction of TSP, J:	0.5	(SCAQMD recommendation)
Mean vehicle speed, S:	5 mi/hr	(On-site)
Dozer path width:	8 ft	
Qty construction vehicles:	0.49 vehicles	(From "Grading" worksheet)
On-site VMT/vehicle/day:	5 mi/veh/day	(Excluding bulldozer VMT during grading)
PM10 Adjustment Factor k	2.6 lb/VMT	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor a	0.8 (dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor b	0.4 (dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
PM10 Adjustment Factor c	0.3 (dimensionless)	(AP-42 Table 13.2.2-2 9/98 for PM10)
Mean Vehicle Weight W	40 tons	assumed for aggregate trucks

Emissions Due to Wind Erosion of Soil Piles and Exposed Graded Surface

Reference: Air Quality Thresholds of Significance, SCAQMD, 1994.

Soil Piles EF = $1.7(s/1.5)[(365 - H)/235](I/15)(J) = (s)(365 - H)(I)(J)/(3110.2941)$, p. A9-99.

Soil Piles EF = 2.9 lbs/day/acre covered by soil piles

Consider soil piles area fraction so that EF applies to graded area

Soil piles area fraction: 0.10 (Fraction of site area covered by soil piles)

Soil Piles EF = 0.29 lbs/day/acres graded

Graded Surface EF = 26.4 lbs/day/acre (recommended in CEQA Manual, p. A9-93).

Calculation of Annual PM10 Emissions

Source	Emission Factor	Graded Acres/yr	Exposed days/yr	Emissions lbs/yr	Emissions tons/yr
Bulldozing	10.6 lbs/acre	0.45	NA	5	0.00
Grading	0.8 lbs/acre	0.45	NA	0	0.00
Vehicle Traffic	4.3 lbs/acre	0.45	NA	2	0.00
Erosion of Soil Piles	0.3 lbs/acre/day	0.45	90	12	0.01
Erosion of Graded Surface	26.4 lbs/acre/day	0.45	90	1,060	0.53
TOTAL				1,079	0.54

Soil Disturbance EF: 15.7 lbs/acre

Wind Erosion EF: 26.69 lbs/acre/day

Back calculate to get EF: 4956.9 lbs/acre/grading day

AVGAS Storage Tank Relocation at Davis-Monthan AFB, AZ

PIMA INTRASTATE AQCR (PIMA COUNTY)

Row #	State	County	Area Source Emissions							Point Source Emissions						
			CO	NH3	NOx	PM10	PM2.5	SO2	VOC	CO	NH3	NOx	PM10	PM2.5	SO2	VOC
SORT																
1	AZ	Pima Co	271,978	2,231	30,102	30,182	10,183	1,876	39,224	2,232	8.7	8,393	899	385	3,102	74
Grand Total			271,978	2,231	30,102	30,182	10,183	1,876	39,224	2,232	8.7	8,393	899	385	3,102	74

Source: USEPA 1999. <http://www.epa.gov/air/data/nettier.html> <site accessed on October 19, 2004>